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ABSTRACT

Samples of forty students at ages twelve, thirteen, fourteen, and fifteen participated in a study of adolescents' sensitivity to suddenly changed circumstances of literary characters. Each student answered six questions on each of five passages; for each set, two questions focus on the story itself and four require consideration of consequences of the depicted events. Each question was scored on a four-point scale ranging from "restricted" to "explainer," responses required explicit discussion revealing substantial awareness of the dynamics of the changed circumstances. Results indicated that scores were significantly influenced by both age and ability; both "high" and "low" groups showed an increase in more-sophisticated judgments with age and a decrease in "restricted" answers. Girls in general scored higher than boys, although scores were similar on a separate, multiple-choice comprehension test. Results were interpreted as consistent with other studies showing a pattern of increasing "explainer" thinking related to age and to verbal intelligence. (AA)

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# ADOLESCENT UNDERSTANDING OF STABILITY AND CHANGE

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## INTRODUCTION

A recurring theme in most subject areas is that of change and its consequencies. A number of studies in the subject areas of geography, history and archaeology and others using anecdotal material, have already indicated the difficulties that adolescents have in understanding the dynamics of change (Peel, 1971). This paper considers the sensitivity of adolescents to people in suddenly changed circumstances depicted in literature.

This sensitivity might be tapped in several ways but one approach only, using Peel's judgmental techniques, is considered here. The subject formulates his own judgments in response to questions relating to a given text and the judgments are coded by independent "assessors", according to the level of thinking revealed.

## FORMULATING JUDGMENTS

### 1. Texts and questions

In selecting texts an attempt was made to control two important variables, "difficulty" and "form". "Difficulty" was assessed by applying three "readability" formulas, two of which are based on word and sentence length (Fog formula, Gunning 1952; Flesch, 1948) and one (Gillie, 1957) which takes some account of the conceptual content. Form was controlled to some degree by selecting passages which focussed on one or two characters only. A further

constraint was imposed by adherence to the stability/change theme itself.

The characteristics of the passages and questions can be illustrated from the first passage in the test battery, an extract from Somerset Maugham's, "Of Human Bondage", where Philip, following the death of his mother, is confronted by his inept uncle and silent aunt. The extract is concerned largely with the second stage of the stability/change cycle discussed by Peel (1971):

| Stage 1 | Stage 2 | Stage 3 | Stage 4 |
|---|---|---|---|
| Stability | change (disorientation) | change (rehabilitation) | stability |

The reader finds no specific description of the stable period before the death of Philip's mother (i.e. Stage 1) although several things can be inferred. The extract describes Philip's continuing disorientation (Stage 2) with the uncle quite inadequately compensating for Philip's parents. A strong, close relationship is implied between (a) Philip and his mother (b) Philip and his "nurse", Emma; in sharp contrast is the proposed Philip/uncle relationship. With the break-up of his home, Philip is seen to move to a position of disorientation pending appropriate therapy (Stage 3) and a return to stability (Stage 4).

The subjects in the investigation had to read the passage and answer six questions. The first two questions focus on the story itself while the remainder require consideration of consequences:

(i) How did Philip come to feel as he did at the end of the story do you think?

(ii) Do you think Mr. Carey could have done more to help Philip? Why do you think so?

(iii) How would Philip get over all this do you think?

(iv) What was Philip doing and why the next day do you think?

(v) What was Philip doing and why three weeks later do you think?

(vi) How did this experience alter Philip's life do you think?

The questions are designed to tap sensitivity to major elements in stability/change situations by requiring subjects to explain the situation and justify their conclusions. Firstly they demand a capacity to relate cause and effect. This includes an awareness of long term and immediate causes operating to produce a single effect or a series of effects, which themselves might be short or long term. Secondly, there has to be an awareness of the two-way possibility in change, from order to disorder and the reverse movement, disorder to order; in this case it might be seen as a movement from personal disorientation to integrated personality, involving the break-up and forming of relationships. Finally there has to be an understanding of how a compensating factor is needed to reverse the change.

## 2. The sample and test battery

Each subject in a sample of 160, spread equally four age groups (12+, 13+, 14+, 15+) and with verbal intelligence quotients of 90 to 115, produced responses to a total of thirty questions (five passages with six questions on each). The six questions on all passages were similar in form to those used for the Philip passage. The forty boys and girls in each age group formed two sub groups of "high" and "low" on the basis of their verbal intelligence scores.

## 3. Coding the responses

As in earlier judgmental research, awareness or understanding is shown in the quality of thinking revealed in the responses to the questions. Two main levels are identified (a) "describer" level where the responses rely largely on a restatement of given facts without explanation or justification for assertions and (b) "explainer" level, containing explicit discussions of the dynamics of change, with judgments drawing on the

subjects' own experience and invoking explanatory concepts from outside the given material. Another level, below describer ("restricted") marks judgments which are irrelevant and ambiguous; an intermediate level between describer and explainer ("describer/explainer") marks judgments which reveal the beginnings of explanation.

The characteristics of each level can be seen in the responses to the first question on the Maugham passage:

> How did Philip come to feel as he did at the end of the story do you think?

The reader has to consider the total situation, infer the feelings prevailing in Philip and make certain deductions about the effect of events upon him. At the lowest level there is a complete failure to grasp the situation described or a misunderstanding of the question so that the subject's judgment amounts to no more than a simple statement of how Philip felt rather than how he came to feel as he did:

(a) I think he was upset and very dreamy.

(b) He felt sad and very hopeful and went to see about what he could find.

An essential characteristic of describer level is a listing of given material with minimal inference and explanation. There is no consideration of the total situation and little awareness of cause and effect emerges. Two sub-categories of describer thinking are discernible, one invokes a simple fact, the other invokes two or more facts:

(a) The boy felt very upset when he slipped off his uncle's knee and he went out because Emma had to leave him.

(b) Philip was upset that his father had died and he had to live with his aunt and uncle, also his nurse had to leave.

At describer/explainer level the concrete elements in the situation remain dominant but there are attempts to combine several facts in limited explanation and some awareness of the overall cause/effect

pattern is emerging, usually with evidence of an explicit time dimension. The thinker seems to have assimilated some general principles of human behaviour against which he can measure the given situation:

> When Philip slipped out of the room he must have felt very miserable, his mother dead, Emma leaving, him going to school and all this happening in a very short time. Perhaps the little boy didn't like his uncle as the uncle didn't seem to like the boy and Emma his nurse being sent away, perhaps he could never see her again.

A distinguishing characteristic of explainer level is the degree of explicit discussion which reveals substantial awareness of the dynamics of change. Powerful inferences and sensitive, comprehensive evaluations, incorporating hypotheses based on broad principles of human behaviour, emerge. It is only at this level that an awareness of the extent and depth of the trauma becomes apparent. Judgments are explicit about the strange surroundings, the absence of love and the feeling of abandonment that Philip felt. These readers sense the strained Philip/uncle relationship and the earlier security of the Philip/mother relationship. In exploring these relationships and Philip's resultant personal crisis these judgments reveal a capacity to identify the formal structure of the situation, involving relationships breaking or being established, and manipulate it at that abstract level:

> Philip must have been upset at the beginning of the passage due to his parent's death and so by the end of the story I would imagine he would be more upset than ever. Children can always sense when they are unwanted and a feeling of insecurity must have been in Philip's heart because he could feel this unwanting. He seems to be clinging to Emma as a mother. Since he no longer had a mother or father she had to act as a substitute. The fondness he shows for Emma is great and although Mr. Carey says Philip is too old to have a nurse, Philip does not seem embarrassed or shy to show his feelings for Emma. At the end he realizes he can no longer have Emma, his parents are gone and he must love and respect his uncle and aunt who seem to despise him for being his mother's child.

For statistical purposes, judgments were scored on a four point scale (Restricted 0; Describer 1; Describer/explainer 2; Explainer 3). A maximum score therefore would be 90 for each subject in the 160 sample (30 questions x 3).

## 4. Predicting and Justifying

Questions three, four, five and six required some imaginative speculation from the readers and questions four and five asked quite specifically for predictions of behaviour the next day and after a few weeks. The reader has to assimilate the essential elements in the given situation and make generalizations about the behaviour depicted but then he must induce likely behaviour and measure his speculations against the information given.

At describer level, predictions are unelaborated, virtually without justification and highly dependent on given material. These judgments tend to suggest either no distinction at all between the next day and three weeks hence or a gross difference without any explanation of why this should be so. At describer/explainer level too, judgments are still closely tied to explicit suggestions in the text but a subtle distinction between the next day and three weeks hence is emerging with some comment on the effect of time.

It is only at explainer level that an explicit awareness of Philip's trauma emerges. The behaviour of the characters is seen in the total context but these judgments go beyond the perfunctory listing of given material. They are more specific and analytical than those at describer/explainer level, bringing out several aspects of the problem and considering Philip's behaviour more imaginatively. The possible changes between, "the next day" and "a few week's time" are seen to be subtle rather than gross; Philip's recovery will be gradual and not complete after three weeks; the effects of the uncle episode will still be lingering and there will be continuing change in an essentially dynamic situation:

Q.4. I think that Philip despised the idea of going to Blackstable in the the first place and so when he got there hated it even more. He was lonely without Emma and the thought of being sent away upset him. I can imagine him wandering around feeling sorry for himself and not knowing what was happening to him. It seems as though he feels that he is in a dream and that everything that has happened to him since his parents died has just been a horrid nightmare.

Q.5. In the following few weeks he was again very much distressed and disturbed. Philip seems to be the sort of boy who will put on a false impression to make it look as if everything is all right but really deep down he is taking notice of everything around him. He still feels hurt but knows that it will upset Mr. Carey if he finds out. Philip will be getting used to the things that are new around him. He will soon get so involved in exploring his new home that this fantasy world will help him forget his troubles. He will still miss Emma and his parents but he will get over this in his own way, taking a long time about it.

Question six, which pushes readers into speculating further in time allowed only the most mature thinkers to generate hypotheses which had not appeared in earlier responses. These judgments concentrate on new relationships and broad changes in behaviour revealing some awareness of ideas relating to cause/effect. There is evidence too of an ability to handle more abstract concepts so that friendship, trust, disillusionment, insecurity and other key ideas are implied or made explicit in the judgments.

## 5. Compensation and Change

The responses to all questions demand a recognition of the uncle's inadequacy as mentor if they are to reveal the extent of Philip's insecurity, but question two focussed attention quite specifically on the uncle as a possible agent of compensation. The reader has to assimilate the factors contributing to Philip's feelings, decide what behaviour is required ideally from the uncle to accommodate those feelings and then explain the discrepancy between the ideal and the practice.

As in responses to other questions, describer and describer/explainer judgments reveal only a hazy awareness of the strained Philip/uncle relationship without being able to develop an explanation. At explainer level

substantial compensating action is seen to be necessary against a background of extensive shock:

> I think Mr. Carey could have done much more to help Philip. Although he knew little about children he could accept Philip gratefully. He could have shown love towards him and have comforted Philip as he must know what it is like to be lost in the world, especially to a small boy who had only lived with them for two weeks when he was ill. He could have tried to welcome Philip more warmly and told him the things he could not have in a more gradual process for he had much on his mind at that moment and a completely new way of life was startling to him and frightening.

These explainer judgments once again convey the reader's awareness of human relationship in a state of dynamic stability. The total cause/effect situation is implied in the reader's exploration of the uncle's role and in the recognition of his considerable responsibility.

## THE PATTERN OF JUDGMENTAL DEVELOPMENT

### 1. Overall scores

The overall mean scores for responses to the five passages show a clear trend with scores related to age and ability. A comprehension score derived from a multiple choice test (Bate, 1966) shows a similar trend although the developmental pattern is rather different. e.g. for comprehension the 13+/14+ point is important for "low" groups; in judgment it is far less so. However, the correlation of comprehension and judgment scores is highly significant statistically.

Table 1. Mean overall scores by age and ability

| Age/Ability | N | Judgment Score (90) | Comprehension Score (35) |
|---|---|---|---|
| 12+ High | 20 | 35.8 | 20.1 |
| Low | 20 | 26.6 | 13.5 |
| 13+ High | 20 | 41.1 | 21.9 |
| Low | 20 | 27.4 | 12.2 |
| 14+ High | 20 | 56.7 | 22.0 |
| Low | 20 | 30.3 | 17.6 |
| 15+ High | 20 | 66.5 | 25.2 |
| Low | 20 | 42.3 | 16.9 |

The increase in score for both judgment and comprehension between 12+ and 15+ is highly significant statistically. There is a highly significant difference between"high" and "low" at each age level too. When all scores are considered together there is evidence of at least a two year difference between "high" and "low" groups in judgment. In comprehension the gap is wider with the 15+ "low" group failing to reach the mean of the 12+ "high" group.

Although overall scores show quite clear trends and highly significant differences by age, a more graphic view of development in the quality of thinking is shown by taking the mean frequency of each category separately as set out in Table 2. The figures again relate to the complete test battery of five passages with six questions per passage.

Table 2. Mean judgment frequency by category

| | | High | | | | Low | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | N | R | D | DE | E | N | R | D | DE | E |
| 12+ | 20 | 1.35 | 21.65 | 6.90 | .10 | 20 | 3.75 | 25.90 | .35 | 0 |
| 13+ | 20 | 1.35 | 17.55 | 9.80 | 1.30 | 20 | 3.60 | 25.45 | .95 | 0 |
| 14+ | 20 | .30 | 8.80 | 14.85 | 6.05 | 20 | 3.10 | 23.70 | 3.05 | .15 |
| 15+ | 20 | .20 | 3.50 | 15.90 | 10.40 | 20 | 1.60 | 16.00 | 10.75 | 1.60 |

A number of points might be noted:

(i) In both "high" and "low" groups there is an increasing frequency of explainer and explainer/describer judgments with age and a corresponding decrease in frequency of restricted and describer judgments.

(ii) By 14+ the "high" groups are largely at describer/explainer level or beyond; the "low" groups are still largely at describer level or below even at 15+.

(iii) Overall there is a low incidence of full explainer thinking. The "high" groups have a substantial increase in explainer judgments over the three years but even at 15+ barely one third of the judgments are coded at explainer level; the 15+ "low" groups is barely functioning beyond describer/explainer level.

(iv) For "high" groups there is an important increase in explainer judgments between 13+ and 14+ and a further significant increase between 14+ and 15+; the "low" groups have a significant explainer increase only between 14+ and 15+.

(v) There appears to be at least a two year difference between these "high" and "low" groups so that, for example, the 13+ "high" group is broadly the same as the 15+ "low" group.

## 2. Boys and girls compared

Girls achieve a higher score than boys in most year/ability groups. Both

girls' and boys' scores reveal a highly significant development between 12+ and 15+ but the pattern is rather different e.g. the "high" girls make an important improvement between 12+ and 13+ as well as between 13+ and 14+; the boys have no significant increase between 12+ and 13+. The difference between girls' and boys' judgment scores is highly significant statistically although far less so than the overall differences by age. In contrast to the judgment scores, the comprehension scores reveal no significant difference between the sexes.

Table 3. Judgment and comprehension mean scores for boys and girls

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | N | Judgment | Comprehension | N | Judgment | Comprehension |
| 12+ H | 9 | 34.9 | 20.3 | 11 | 36.5 | 19.9 |
| L | 10 | 24.9 | 14.1 | 10 | 28.3 | 12.8 |
| 13+ H | 10 | 35.8 | 21.1 | 10 | 46.3 | 22.7 |
| L | 13 | 27.3 | 12.0 | 7 | 27.4 | 12.1 |
| 14+ H | 10 | 49.1 | 21.8 | 10 | 64.2 | 22.2? |
| L | 9 | 26.7 | 16.9 | 11 | 33.2 | 17.3 |
| 15+ H | 7 | 61.0 | 23.7 | 13 | 69.5 | 26.0 |
| L | 7 | 37.4 | 17.4 | 13 | 44.9 | 16.6 |

## DISCUSSION

The overall pattern of development in judgmental thinking is broadly similar to that found by other researchers using similar techniques in other subject areas. Reviews of research (Peel 1971, 1976; Peel and de Silva 1972) show a consistent pattern of increasing explainer thinking related to age and in most instances to verbal intelligence. Significant frequency of explainer thinking is not found before 14+ and might not be firmly established before

16+ (Hallam, 1967) or even 17+ (Mason, 1974). With groups of higher intelligence (beyond 115 I.Q.) excluded here it is not surprising to find relatively low frequency of explainer thinking when subjects have to formulate their own judgments. None of the "low" groups are functioning substantially beyond describer level and even the "high" groups at 15+ have only a third of their judgments coded at explainer level.

The highly significant correlation of judgment and comprehension scores is to be expected since certain skills (eg. inferential comprehension) are demanded by both tests. Perhaps more surprising is, on the one hand, highly significant increases in judgment scores while comprehension scores remain constant and on the other hand, no significant increase in judgment scores when comprehension scores show substantial improvement. It seems likely that a certain level of comprehension is necessary before mature judgmental thinking develops but a substantial competence in comprehension appears to be no guarantee of this.

When boys' and girls' scores are compared a salient point is the significant difference between girls and boys on judgment but their similarity (with no significant difference) on comprehension. Two key differences between the judgment and comprehension test might account for these patterns. Amongst other things, the judgment battery demands inferences about human relationships undergoing sudden change and an ability to differentiate emotions. The comprehension test, although requiring inferential thinking, does not focus on human relationships and emotions, therefore an ability amongst girls to think more maturely in those areas might account for their superiority on the judgment tests. D'Arcy (1973) has pointed to consistent findings showing preference amongst girls for situations in literature based on human relationships. Gollin (1958) found girls superior to boys in making inferences about human behaviour and Yarlott (1973) found them superior in differentiating emotions.

## IMPLICATIONS

Even within a fairly modest band of the intelligence range it seems that for this kind of activity a considerable breadth of performance has to be catered for in the classroom with different ability groups gaining significantly different insights from the same text. The results from a conventional multiple-choice comprehension test will not necessarily predict the quality of thinking emerging in judgments about human relationships undergoing sudden change and in these situations girls' rather than boys' judgments are more likely to present a model for more mature thinking. This does not imply a valuing of only explainer judgments in classroom activities; describer and describer/explainer judgments provide a sound basis for the development of mature thinking. These judgments are not "wrong" but simply limited in explainer content. In Vygotsky's terms (1962), describer judgments are concerned with "meaning" but not "sense" which only arises with assimilation of the whole given extract and the invocation of external concepts. In the more mature judgments these concepts, with their greater generality and abstraction, are an important feature of the explanations, engendering awareness of the variety in human temperament, behaviour and attitudes. The problem for the classroom teacher is to provide learning experiences where mature judgments, incorporating relevant concepts, can be developed.

Materials similar to those of the present investigation might be used in a variety of teaching situations with the broad aim of developing understanding of human situations in dynamic balance, through imaginative and speculative reasoning. The mould need not always be so strictly "transactional" (Britton, 1970) as that adopted for test purposes but since it allows operation at concrete and more abstract levels it might provide a sufficiently flexible framework for classroom activity focussing on language as literature.

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